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09/588,490	06/06/2000	Bharat Tarachand Doshi	48-11	9155

7590 10/28/2003

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EXAMINER
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BURGESS, BARBARA N

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 10/28/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/588,490

Applicant(s)

DOSHI ET AL.

Examiner

Barbara N Burgess

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 12 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This Office Action is in response to amendments filed on August 12, 2003. Claims 1-17 are presented for further examination.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 7, and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Dantu et al. (hereinafter "Dantu", 6,532,088 B1).

As per claims 1, 16, and 17, Dantu discloses a method of routing traffic between first and second nodes in a network so as to provide protection against network failures, the method comprising the steps of:

- Routing units of traffic on corresponding sets of trunks connected between the first and second nodes such that the traffic is balanced between disjoint paths (column 1, lines 13-19, column 3, lines 26-39, column 8, lines 1-15, 20-30, 64-66, column 9, lines 10-23, column 13, lines 50-67);

Art Unit: 2157

- Implementing a restoration process for the traffic utilizing at least one of a service layer switching and transport layer switching (column 3, lines 33-39, 60-67, column 4, lines 49-53, 64-67, column 7, lines 20-23, 27-35, column 11, lines 5-8);
- Wherein the routing step further comprises routing a given one of the units of traffic such that at least first and second portions of the given unit of traffic are routed on the respective first and second trunks of a corresponding set of trunks, the traffic in the given unit of traffic thereby being balanced between at least a pair of disjoint paths comprising the first and second trunks (column 1, lines 13-19, column 3, lines 26-39, 60-67, column 4, lines 49-53, 64-67, column 7, lines 20-23, 27-35, column 8, lines 1-15, 20-30, 64-66, column 9, lines 10-23, column 11, lines 5-8, column 13, lines 50-67).

As per claim 2, Dantu discloses wherein each one of the first and second units of traffic comprise OC-x units of traffic (column 1, lines 14-19, 40-46, column 4, lines 40-45).

As per claim 3, Dantu discloses wherein the service layer switching process comprises a packet-based switching process (column 1, lines 65-67, column 2, lines 1-5, 15-20, column 3, lines 33-39, 60-67, column 4, lines 49-53, 64-67, column 7, lines 20-23, 27-35, column 11, lines 5-8).

Art Unit: 2157

As per claim 4, Dantu discloses wherein the service layer switching process comprises an Internet protocol (IP) switching process (column 1, lines 65-67, column 2, lines 1-5, 15-20, column 3, lines 33-39, 60-67, column 4, lines 49-53, 64-67, column 7, lines 20-23, 27-35, column 11, lines 5-8).

As per claim 5, Dantu discloses wherein the first and second nodes are connected by first and second sets of trunks, each of the sets of trunks including multiple trunks, with each of the trunks in a given set of trunks supporting a designated portion of at least one of the units of traffic (column 6, lines 1-8, column 7, lines 45-47, column 8, lines 25-30, column 9, lines 10-20, column 11, lines 49-56).

As per claim 7, Dantu discloses wherein the restoration process is implemented using service layer switching (column 4, lines 49-53, 64-67, column 6, lines 4-6, column 7, lines 20-23, 27-30).

As per claim 15, Dantu discloses wherein the units of traffic are routed between the first and second nodes so as to provide an opportunity to implement an enhanced quality of service for at least one of the units of traffic (column 13, lines 10-20, column 17, lines 3-10).

Art Unit: 2157

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dantu et al. (hereinafter "Dantu", 6,532,088 B1) in view of Callon.

As per claim 6, Dantu does not explicitly disclose:

- Wherein the units of traffic are routed such that a first half of the given one of the units of traffic is routed on the first trunk, and a second half of the given unit is routed on the second trunk.

However, in an analogous art, Callon teaches packets using multiple paths to reach their destination. Certain packets may be routed on a first path, while other packets are mapped on a second path (column 3, lines 13-32).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate routing half of the traffic on a on a given set of trunks and the second half on a second given set of trunks in Datu's method allowing redundant virtual circuits and fast switch-over in the event of a failure along one of the paths.

Art Unit: 2157

5. Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dantu et al. (hereinafter "Dantu", 6,532,088 B1) in view of Tomizawa et al. (hereinafter "Tom", US 2001/0003833 A1).

As per claim 8, Dantu does not explicitly disclose wherein the first and second nodes are connected by first and second sets of trunks such that the nodes and sets of trunks form a four-trunk ring, wherein each of the first and second sets of trunks includes a primary trunk and a backup trunk.

However, in an analogous art, Tom discloses that the invention (re-routing for path restoration after a failure) can be embodied in a similar manner using 4-fiber rings (paragraph [0028], [0031], [0032], [0035], [0082], [0087], [0093], [0104]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of a four-trunk ring in Dantu's method in order to circulate packets in two directions in order for the token to be transferred around the ring in the opposite direction of the failure causing all nodes to get the token despite the link failure.

As per claim 9, Dantu further discloses wherein at least one of the units of traffic is routed on one of an upper or lower portion of the ring (column 11, lines 50-56).

As per claim 10, Dantu discloses wherein the at least one unit of traffic is split equally between the primary trunk and the backup trunk associated with the upper and lower portion of the ring (column 9, lines 10-23).

As per claim 11, Dantu discloses wherein the at least one unit of traffic is routed entirely on the primary trunk associated with the upper or lower portion of the ring (column 3, lines 28-39).

As per claim 12, Dantu further discloses wherein the ring comprises an IP/optical hybrid ring, and the restoration process is implemented using service layer switching (column 4, lines 49-53, 64-67, column 6, lines 4-6, column 7, lines 20-23, 27-30).

As per claim 13, Dantu discloses wherein the ring comprises a SONET/optical ring, and the restoration process is implemented using transport layer switching (column 1, lines 13-19, column 4, lines 49-53, 64-67, column 6, lines 11-16, column 7, lines 20-23, 27-30).

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dantu et al. (hereinafter "Dantu", 6,532,088 B1) in view of Tomizawa et al. (hereinafter "Tom", US 2001/0003833 A1) in further view of Sakano et al. (hereinafter "Sakano", US 2001/0026384 A1).



Art Unit: 2157

As per claim 14, Dantu, in view of Tom, does not explicitly disclose wherein the first and second nodes comprise add-drop multiplexers connected by the sets of trunks, each of the add-drop multiplexers also being coupled to a corresponding router. However, in an analogous art, Sakano discloses the use of add-drop multiplexers (paragraph [0060]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the add-drop multiplexers in Dantu's method in order for selecting either a drop route for extracting a signal to be output in a second direction or a through route for looping back the signal to the ring.

***Response to Arguments***

**The Office notes the following arguments:**

- (a) Applicants initially note that the 102(e) rejection is improper on its face for failing to provide a clear disposition for dependent claim 6.
- (b) The Dantu reference makes no reference whatsoever to disjoint path routing of the type claimed.

**In response to:**

- (a) The rejection of claim 6 is a 103(a) rejection and has been changed to provide a clear disposition of this claim.
- (b) Applicant's arguments filed have been fully considered but they are not persuasive.

Dantu does disclose the use of disjoint path routing in the following portions of the reference:

(column 3, lines 28-30, 33-37, 41-50, 62-66, column 4, lines 42-45, 49-50, column 6, lines 22-24, column 8, lines 7-19, column 9, lines 15-23, 51-55, column 11, lines 51-56, column 13, line 67, column 14, lines 1-2, Figures 3, 8-9).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

Art Unit: 2157

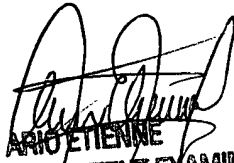
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess  
Examiner  
Art Unit 2157

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October 19, 2003

  
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